

Amendments to the Drawings:

The attached drawing includes changes to Fig. 7A. This sheet, which includes Fig. 7A replaces the original sheet including Fig. 7A.

Attachment: Replacement Sheet
Annotated Sheet Showing Changes

REMARKS/ARGUMENTS

This Amendment is in response to the Non-Final Office Action mailed March 11, 2009. Claims 1-15 and 18-40 are pending in the present application. Claims 1-13, 32 and 33 have been previously withdrawn from the application pursuant to a restriction requirement. Claims 16-17 have been canceled. Claims 14, 15, 18-31 and 34-40 stand rejected.

Applicant has amended claims 14, 22, 34, and 38-39. Applicant submits that no new subject matter has been introduced by the claim amendments.

Claims 14-15, 18-26, 28-31 and 34-40 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Van Dam et al. (U.S. Publication No. 2003/0008411, hereinafter "Van Dam") in view of Quake et al. (U.S. Publication No. 2002/0037499, hereinafter "Quake").

Claim 27 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Van Dam in view of Quake as applied to claims 14-15, 18-26, 28-31, and 34-37, and in further view of Raillard et al. (U.S. Publication No. 2002/0102577).

Telephone Interview

The undersigned thanks the Examiner for the helpful telephone interview conducted on July 9, 2009.

Claim Rejections - 35 U.S.C. § 103

Claim 14 recites "applying an actuating force from two control lines to the plurality of sets of closed loop forming control valves to form the plurality of closed looped flow channels such that each closed looped flow channel comprises a closed loop spanning multiple rows and multiple columns," among other elements. Applicants respectfully submit that the cited references, either considered alone or in combination, do not teach or suggest at least these elements in the manner claimed.

Van Dam discusses a system for combinatorial synthesis but provides no suggestion of applying an actuating force from two control lines to the plurality of sets of closed loop forming control valves to form the plurality of closed looped flow channels such that each closed looped flow channel comprises a closed loop spanning multiple rows and multiple columns. Van Dam merely suggests the possibility of forming a "serpentine" arrangement of flow channels" and provides no discussion related to using two control lines to actuate sets of

control valves to form a plurality of closed looped flow channels. (Van Dam at paragraph [0190]). Quake does not make up for this deficiency in Van Dam.

Quake discusses a target loop 58 in relation to FIG. 14. Quake provides no discussion related to a closed loop spanning multiple rows and multiple columns as recited in claim 14.

Thus, neither reference, either alone or in combination teach or suggest at least the elements recited by claim 14. For at least these reasons, claim 14 is in condition for allowance.

Claims 15, 18-31, and 38, which depend from claim 14, are in condition for allowance, for at least the reasons discussed in relation to claim 14, as well as for the additional elements they recite. As an example, neither reference teaches or suggests that the first valve of the set of loop forming control valves includes a control channel of the pump that is independently actuated with respect to other control channels of the pump as recited by claim 38. Van Dam does not show any loop forming control valves, but merely suggests the possibility of a valve to redirect flow. Quake utilizes microvalve 72 and microvalve 74 for form target loop 58. These microvalves are completely independent from pump channels 56. Thus, neither reference, either considered alone or in combination, teach or suggest a loop forming control valve that includes a control channel of the pump.

Claim 34 recites "a first loop forming control valve operatively disposed with respect to an inlet of one of the first and/or the second flow channels and a second loop forming control valve operatively disposed with respect to an outlet of one of the first and/or second flow channels to form the closed looped flow channel," and "applying an actuating force to the first loop forming control valve using a first control line and to the second loop forming control valve using a second control line to form the closed looped flow channel" including a closed loop.

As illustrated in FIG. 7A, the loop forming control valves 724B (inlet side) are actuated using one control line and loop forming control valves 724A (outlet side) are actuated using a second control line. (See, for example, Specification at paragraph [0146].)

Neither Van Dam nor Quake teach or suggest a first loop forming control valve operatively disposed with respect to an inlet that is actuated by a first control line or a second

loop forming control valve operatively disposed with respect to an outlet that is actuated by a second control line.

Claims 35-37 and 39-40, which depend from claim 34, are in condition for allowance, for at least the reasons discussed in relation to claim 34, as well as for the additional elements they recite. As an example, neither reference teaches or suggests that the first loop forming control valve includes a control channel of the pump as recited by claim 40.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

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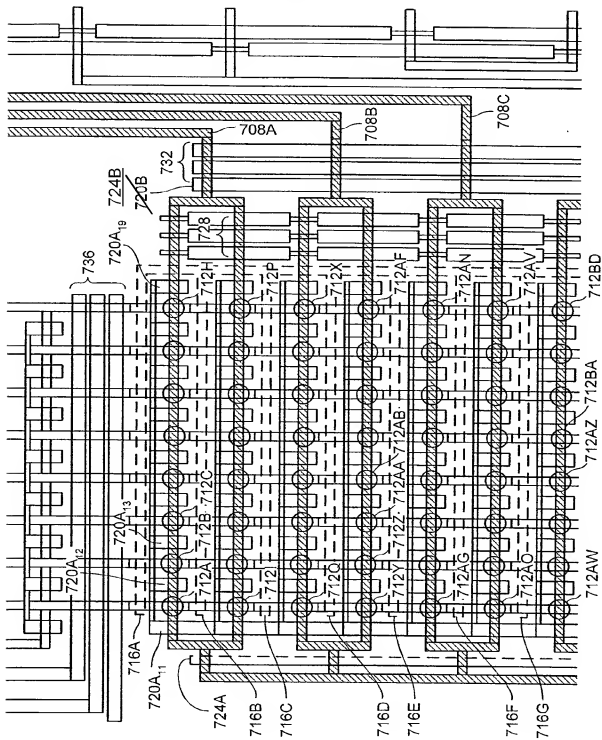


FIG. 7A